

Fırat University Faculty of Engineering

Department of Mechatronics Engineering Course List

1. SEMESTER

Optics Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
1630 FİZ 105	Physics Lab.-1	0	0	2	1	2	
1540 FİZ 111	Physics-1	4	0	0	4	6	
1640 KİM 105	Chemistry-1	4	0	0	4	6	
1650 KİM 109	Chemistry Lab.-1	0	0	2	1	2	
1530 MAT 161	Mathematics-1	4	0	0	4	6	
1590 MKM 103	Algorithm and Programming-1	2	0	2	3	4	
1620 MKM 105	Introduction to Mechatronics Engineering	1	0	0	1	2	
1570 YDI 107	English-1	2	0	0	2	2	
Semester Total		17	0	6	20	30	

2. SEMESTER

Optics Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
1080 BMÜ 122	Algorithm and Programming-2	2	0	2	3	4	MKM103
1280 FİZ 106	Physics Lab.-2	0	0	2	1	2	
1270 FİZ 112	Physics-2	3	0	0	3	5	
1260 MAT 104	Linear Algebra	2	0	0	2	2	
1030 MAT 162	Mathematics-2	4	0	0	4	4	
1240 MKM 120	Computer-Aided Technical Drawing	2	0	2	3	5	
1070 MKM 122	Electrical Circuits	3	0	2	4	6	
1060 YDI 108	English-2	2	0	0	2	2	
Semester Total		18	0	8	22	30	

3. SEMESTER

Optics Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
2592 AİT 201	Atatürk's Principles and History of the Turkish Revolution-1	2	0	0	0	1	
2593 MAT 271	Differential Equations	4	0	0	4	5	
	MKM 223	3	0	0	3	5	
2595 MKM 211	Engineering Mechanics	3	0	0	3	5	
2596 MKM 213	Materials Science	2	0	2	3	5	
	MKM 225	3	0	0	3	5	
2598 TRD 209	Turkish Language-1	2	0	0	2	2	
Social Elective Course		2	0	0	2	2	
2590 EGT 271	Development and Learning						
2511 MKM 217	Total Quality Management						
2512 RTV 203	Political Science						
2513 RTV 223	Oral Expression						
2570 SOS 249	Philosophy of Ethics and Morality						
2580 SOS 251	Industrial Sociology						
2516 SOS 255	Management Sociology						
2517 SYE 227	First Aid						
Semester Total		21	0	2	20	30	

4. SEMESTER

Optics Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
2110 AİT 202	Atatürk's Principles and History of the Turkish Revolution-2	2	0	0	0	1	
2010 IST 234	Probability and Statistics	3	0	0	3	2	
	MKM 224	0	0	2	2	2	MKM223
2113 MKM 214	Numerical Analysis	1	2	0	2	6	MAT104
2114 MKM 218	Manufacturing Processes	2	0	2	3	4	
2115 MKM 220	Thermodynamics and Heat Transfer	3	0	0	3	5	
2116 MKM 222	Technical English	3	0	0	3	4	
2117 TRD 210	Turkish Language-2	2	0	0	2	2	
	MKM 226	3	0	0	3	4	

Semester Total			19	2	4	21	30	
5. SEMESTER								
Optics	Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
3520	MKM 303	Theory of Machines	3	0	0	3	5	MKM211
3512	MKM 311	Machine Elements	3	2	0	4	5	MKM211
3513	MKM 323	Fluid Mechanics	2	0	0	2	3	
	MKM 343	System Dynamics and Modeling	3	0	0	3	4	MAT271
	MKM 345	Electromechanical Systems	4	0	0	4	5	MKM122
3516	MKM 329	Digital Electronics	2	0	2	3	4	
3517	MKM 331	Professional Practice-1	0	2	0	0	1	
		Technical Elective Courses-1	2	0	0	2	3	
3518	MKM 333	Air Conditioning Systems						
3519	MKM 335	Optimization Technique						
3521	MKM 337	Smart Materials						
3522	MKM 339	Introduction to Microelectromechanical Systems						
Semester Total			19	4	2	21	30	
6. SEMESTER								
Optics	Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
	MKM 338	Automatic Control	3	0	0	3	5	
3013	MKM 320	Sensors and Measurement Methods	1	0	2	2	3	
	MKM 336	Computer-Aided Design and Manufacturing	1	0	2	2	3	
3014	MKM 322	Microprocessors	2	0	2	3	4	BMÜ122
3015	MKM 324	Digital Signal Processing	3	0	0	3	3	
3016	MKM 326	Industrial Programming	1	2	0	2	3	
3017	MKM 328	Artificial Learning Methods	2	0	0	2	3	
	MKM 340	Electrical Machines Laboratory	0	0	2	1	3	MKM345
		Technical Elective Courses-2	2	0	0	2	3	
3070	MKM 310	Mechanical Vibrations						
3080	MKM 312	Factory Organization						
3110	MKM 318	Biomedical Measurement						
3023	MMU 332	Finite Element Analysis						
Semester Total			15	2	8	20	30	
7. SEMESTER								
Optics	Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
	MKM437	Digital Control	2	0	0	2	4	
	MKM439	Power Electronics and Drives	3	0	2	4	6	MKM122,
4513	MKM427	Mechatronic Design	0	2	0	1	5	
4514	MKM429	Robot Vision	2	0	0	2	5	
4515	MKM431	Labor Law	2	0	0	2	4	
4516	MKM433	Professional Practice-2	0	2	0	0	1	
	MKM441	Engineering Economics	2	0	0	2	2	
		Technical Elective Courses-3	2	0	0	2	3	
4517	BMÜ467	Computer Networks						
4620	MKM417	Vehicle Dynamics						
Semester Total			13	4	2	15	30	
8. SEMESTER								
OPTION-1								
Optics	Course Code	Course Name	T	U	L	K	ECTS	Prerequisite
4020	MKM402	Graduation Project	0	2	0	1	6	MKM427
		Technical Elective Courses-4	3	0	2	4	6	
	MKM426	Robotic Systems						
	MKM428	Optical Systems						
		Technical Elective Courses-5	2	0	0	2	5	
	MKM430	Special Electric Machines						
	MKM432	Flexible Manufacturing Systems						
		Technical Elective Courses-6	2	0	0	2	5	
	MKM434	Mechatronics in Automotive Engineering						

	MKM436	Renewable Energy Systems							
		Technical Elective Courses-7	2	0	0	2	5		
	MKM438	Hydraulic and Pneumatic Systems							
	MKM440	Biomechatronic Systems							
		Social Elective Courses-2	2	0	0	2	3		
	MKM442	Entrepreneurship and Innovation							
	MKM444	Occupational Health and Safety							
		Semester Total	11	2	2	13	30		
OPTION-2									
	Optics Course Code	Course Name	T	U	L	K	ECTS	Prerequisite	
4020	MKM402	Graduation Project	0	2	0	1	6	MKM427	
	MKM446	Applied Engineering	5	14	0	12	24		
		Semester Total	5	16	0	13	30		